CLAIMS

What is claimed is:

1. A dynamic pointing accuracy evaluation system used in conjunction with a weapon system including a gun that fires a projectile from a barrel toward a target upon receipt of a shoot command from an automated fire control system that is activated by a firing command generated by a gunner viewing the target through a gun sight, the dynamic pointing accuracy evaluation system comprising:

a firing-image camera mounted to the barrel of the gun and having a known imaging relation relative to a pointing direction of the barrel of the gun;

a photo trigger command line that transmits a photo trigger command from the fire control system to the firing-image camera, whereupon the firing-image camera produces a firing image upon receipt of the photo trigger command; and

a computer that receives the firing image and determines a calculated strike location from the firing image and from a range of the gun to the target.

2. The dynamic pointing accuracy evaluation system of claim 1, wherein the firing-image camera is a digital camera.

3. The dynamic pointing accuracy evaluation system of claim 1, further including

a range finder that provides to the computer an actual range from the gun to the target associated with the time at which the photo trigger command is transmitted.

4. The dynamic pointing accuracy evaluation system of claim 1, wherein the fire control system generates the photo trigger command at the same time that it generates the shoot command.

5. The dynamic pointing accuracy evaluation system of claim 1, wherein the computer contains a reference image of the target.

6. The dynamic pointing accuracy evaluation system of claim 1, further including

a gun-sight camera that produces a gun-sight image upon receipt of the shoot command and transmits the gun-sight image to the computer.

7. A dynamic pointing accuracy evaluation system used in conjunction with a weapon system including a gun that fires a projectile from a barrel toward a target upon receipt of a shoot command from an automated fire control system that is activated by a firing command generated by a gunner viewing the target through a gun sight, the dynamic pointing accuracy evaluation system comprising:

a digital firing-image camera mounted to the barrel of the gun and having a known imaging relation relative to a pointing direction of the barrel of the gun;

a photo trigger command line that transmits a photo trigger command from the fire control system to the firing-image camera at the same time that the fire control system generates the shoot command, whereupon the firing-image camera produces a firing image upon receipt of the photo trigger command;

a range finder that provides to the computer an actual range from the gun to the target associated with the time at which the photo trigger command is transmitted; and

a computer that receives the firing image and determines a calculated strike location from the firing image and from a range of the gun to the target.

8. The dynamic pointing accuracy evaluation system of claim 7, wherein the computer contains a reference image of the target.

9. The dynamic pointing accuracy evaluation system of claim 7, further including

a gun-sight camera that produces a gun-sight image upon receipt of the shoot command and transmits the gun-sight image to the computer.

10. A dynamic pointing accuracy evaluation system used in conjunction with a weapon system including a gun that fires a projectile from a barrel toward

a target upon receipt of a shoot command from an automated fire control system that is activated by a firing command generated by a gunner viewing the target through a gun sight, the dynamic pointing accuracy evaluation system comprising:

a firing-image source having a known imaging relation relative to a pointing direction of the barrel of the gun;

an imaging trigger command line that transmits an imaging trigger command from the fire control system to the firing-image camera, whereupon the firing-image source produces a firing image upon receipt of the image trigger command; and

a computer that receives the firing image and determines a calculated strike location from the firing image and from a range of the gun to the target.

11. A method for evaluating dynamic pointing accuracy used in conjunction with a weapon system including a gun that fires a projectile from a barrel toward a target upon receipt of a shoot command from an automated fire control system that is activated by a firing command generated by a gunner viewing the target through a gun sight, the method comprising the steps of:

the gunner sending a firing command to the automated fire control system;

the automated fire control system

sending a shoot command to the gun responsive to the firing command, and

sending a photo trigger command to a firing-image camera mounted on the barrel of the gun and aimed parallel to a boresight of the gun, responsive to the firing command;

the firing-image camera producing a firing image responsive to the photo trigger command and sending the firing image to a computer; and

the computer determining a calculated strike location from the firing image and from a range of the gun to the target.

12. The method of claim 11, wherein the gun is not fired during the performance of the method.

13. The method of claim 11, wherein the step of the firing-image camera producing includes the step of

the firing-image camera producing a digital image.

14. The method of claim 11, including an additional steps of

providing a range finder, and

the range finder automatically providing an actual range from the gun to the target associated with the time at which the photo trigger command is sent to the firing-image camera.

15. The method of claim 11, wherein the fire control system generates the photo trigger command at the same time that it generates the shoot command.

16. The method of claim 11, wherein the computer contains a reference image of the target, and wherein the method further includes

superimposing the strike location upon the reference image of the target.

17. The method of claim 11, including the additional steps of

providing a gun-sight camera that produces a gun-sight image upon receipt of the firing command and transmits the gun-sight image to the computer.